

1845

OBSERVATIONS

FOR ASSISTING

FARMERS, &c.



H. Latham



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OBSERVATIONS

FOR ASSISTING

FARMERS and OTHERS

TO

Acquire the Knowledge of their Business;

WITH

CERTAIN MEANS

Towards perfecting the

H U S B A N D R Y

O F

G R E A T B R I T A I N,

A S

Delivered JANUARY 18, 1779,

A T T H E

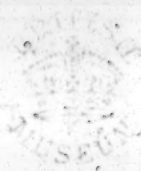
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By GEORGE EDWARDS, M. D.

2000

RESERVATION

LANDS



CRITICAL

LANDS

AND

BY GEORGE

OBSERVATIONS

FOR ASSISTING

FARMERS, &c.

TO depart from custom and leave the common track, is not pardonable, without a sufficient plea for the singularity. I have, Gentlemen, diverted the subject of this your annual oration from medicine, to a different science; but if I have chosen a theme as important and as useful to mankind, as any in medicine itself, and which it is in your power, as hereafter will appear, liberally to improve, I hope I shall not incur your censure.

I wish to draw your attention to Agriculture, and take this opportunity for considering certain means of improving and bringing
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nearer to perfection the husbandry of this kingdom; a subject indeed extensive! insomuch, that I can only offer a general account of what I apprehend to be useful for accomplishing this important object.

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In Agriculture a variety of knowledge is necessary, many difficulties are to be surmounted, and assistances of very different natures called in: the farmer therefore, in many cases, must needs be obliged to others in different stations and ranks of life for expediting his labours, and advancing his business; and from the utility of his employment, he is well entitled to such aids as their knowledge or fortunes can afford. By your leave, therefore, I shall consider the performance of what renders great services to Agriculture, but is not immediately connected with it, as the first means of perfecting the husbandry of Great Britain, and proceed to take notice of the different assistances, which in this view are necessary or useful. These are,

1. Patronage of the state.
 2. Of societies established to promote and improve Agriculture.
 3. Of individuals eminent for their skill in the different branches of science, which
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are collateral to Agriculture. 4. Of gentlemen of landed property. 5. An adequate supply of money. 6. Populousness of the community. 7. A flourishing state of manufactures, trade, and commerce.

The time allotted for this discourse will not admit of my entering here into enlargement and details ; I shall therefore content myself with having enumerated the heads under this division, requisite for the encouragement of husbandry, and proceed directly to consider what has a more immediate tendency to advance the culture of this kingdom.

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The second means of perfecting the husbandry of Great Britain, is to enable farmers, in every part of the kingdom, on a solid basis to acquire the knowledge of their business, and discover new facts and improvements in Agriculture.

This subject may in general be considered under the following heads, which are very distinct from one another, as will appear when we come to treat of them. 1. Facts. 2. Observations. 3. Experiments. 4. Experience, so called. 5. Information. 6. The method

thod of propagating the knowledge of judicious husbandry through the kingdom. We shall consider these in the above order, and at the same time speak of the regulations and precautions which are necessary to be observed in acquiring and extending the knowledge of Agriculture by their assistance.

1. As to Facts :

We need only observe of them in general, that they are the principal and only certain foundation of science, and that true and useful knowledge consists in the possession of them.

§§ Our acquisitions in science, and acquaintance with things, are very much in proportion to the number of facts which we know concerning them, tho' other circumstances, as the importance of them, may have equal influence. The facts in Agriculture are very numerous, being exceedingly so, when we consider it in a more extensive view than usually is done, but in common practice they are many and various. The differences of soils, climates, and seasons, and divers other causes, render a multitude of facts every where necessary in
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the cultivation of land, nor can any man become a farmer, unless he is extensively acquainted with them. Notwithstanding this, the facts which are known in common husbandry are too few, and the husbandman will find many advantages from introducing into his practice a greater number.

§§ The magnitude of some facts renders them so conspicuous that they cannot pass unnoticed, while others less considerable are scarce observed, and when fully seen, often attract no attention. The use of things, however, is far from according with their eminence: small facts, a sufficient number being brought together, frequently are of great value; they may be indispensably necessary in the fabric of large bodies, or in themselves may have considerable importance. It is the province of œconomy, in concerns of science no less than in those of a pecuniary nature, to collect these, which, by its means, may in a little time be amassed into a valuable treasure.

The practice of husbandry is one process and habit of œconomy, inconsistent with the least waste. There is nothing sordid, nor any filthiness,

thiness, which in good husbandry may be thrown away, wherein dung, stale, and dirt are heaped together, and preserved as carefully as gold. The employment of every little aid and advantage, making use of what adds the least improvement, and no neglect of the smallest emolument, chiefly constitute the difference, the important difference! between good and bad management in husbandry. There are some things in the practice of the skilful farmer, such as plowing with more address and industry, keeping water-furrows and runnels open, good seed, the destruction of weeds, removal of stones from the surface of the ground, drawing as well with the ox as with the horse, a rather superior breed of cattle, a careful salvage of manures and stale, a studious accumulation of small gains, and other instances too tedious to mention, which are trifling in themselves, but of great importance from their number and repetition, and when properly husbanded, procure the farmer a sufficient return for his labours; while the bad manager, from neglect of them is in the same situation, subjected to poverty and distress, although he has an equal opportunity of benefiting by them.

The small profits of individuals yield in the end important advantages to the public; an additional peck of corn, or a similar increase of any other crop, produced by good husbandry on every acre of land through the kingdom, is a sufficient inducement, on principles of sound policy, to root out bad management in husbandry by legislative interference.

§§ No proofs can be admitted in science which do not carry with them perfect evidence: but alas! it is too common to dispense with this condition, and to ground knowledge on a very sorry, insecure foundation; for uncertain reasoning and theory, are frequently employed to determine and ascertain facts. Analogy and similitude are then made the grounds of facts, and proofs are trusted, which by no means warrant the conclusions drawn from them: Probability is by the theorist thought sufficient evidence, and a final purpose pointed out, becomes a demonstration. Knowledge then is often supported by facts, which have no foundation in themselves, or which are falsely applied.

Uncertain reasoning has very bad effects in affairs of moment, and therefore is never to be employed in Agriculture. Certain reasoning may, and often does, constitute the happiness of science and the interest of mankind; but so limited and imperfect is the capacity of man, that he frequently can place no dependance on it, and where the least doubt remains, where the affair is important, and he is anxious concerning truth, he must consult and find the reality of the fact in a state of existence, either in the works of nature or those of art produced by experiment, or other means.

If I may not in this place enter on the arguments which are necessary to support the doctrines above advanced, I shall not be refused in their room to offer the authorities of two very respectable characters. "Reason has deceived me so many times," says that excellent writer on husbandry, Gabriel Platte, "that I will trust reason no more, unless the point in question be confirmed and made manifest." A philosopher in this city, well versed in the practice and teaching of physic, often says, "it is ninety-nine to one that reasoning is false in
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medicine:" and in Agriculture, as a sister science, his observation will not be far short of holding equally true.

Theory is with no great difficulty excluded from injuring agriculture: the farmers simplicity of mind and good sense, are able quickly to strip off its thin garment, and see the deceptions underneath. The fatal influence of uncertain reasoning is not so easily avoided. Great skill and vigilance are necessary to guard against its artifice; especially as man has a natural propensity to accept the imperfect evidence of reasoning, and confirm it into fact.

§§ Facts, from their influence on the affairs of man, can greatly prejudice, or equally benefit him, as they are false or true. The farmer's knowledge is not of a speculative nature, but is designed for practice. Acquaintance with the truth of facts is therefore of more importance to him than to many other classes of men: any practice of husbandry which is built on dubious facts, may very much disappoint him; and his pursuing, instead of fallacious measures, sure and useful ones, establish his labours on the most desirable grounds.

They who, on the knowledge of truth, mean in business to adopt and follow the most beneficial and surest practice, should equally distrust the appearances of facts, whether they are favourable or the contrary to their views; they should strip off the coverings of things as freely as the farmer with the keen scythe exposes his meadows, and attain a compleat knowledge of them. They ought to avoid haste, otherwise they will receive as certain, what is imperfectly known, and inadvertently mistake falsehood for truth. It is equally incumbent on them, however difficult they may find the task, neither to embrace facts from prepossession, nor to reject them from prejudice. Partialities of this kind are however the weakness of human nature: the farmer experiences many disadvantages from them. How often, for example, do they render him unfavourable to a new practice of great utility, because it is different from one to which he has been accustomed?

The advantages of caution hardly need to be inculcated, before our assent is given or refused to facts. Husbandry however cannot be regulated, but would be oppressed by distrust applied for this purpose. The farmer's undertakings are necessarily extensive and bold, and must be executed by means
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of abilities, which effectually discern between truth and falshood, and not be checked with too much anxiety and dread.

There are many external accidents, which prevent causes from producing their natural effects, and vary the state of facts without impeaching in the least their truth. In agriculture occurrences of this kind are frequent: differences of soil, cold and heat, moisture or dryness, disease, and various other affections, disturb the regularity of nature's operations, and the labours of industry. The farmer having performed his annual toil, and deposited the seed in the earth, has done his part, but knows he cannot promise for the future harvest, which depends on many unforeseen contingencies, as well as on his past industry. This observation is often of much practical service for avoiding fallacy. A valuable improvement in agriculture may fail by chance, and be undeservedly rejected; and on the other hand despicable management succeed by accident, and be fatally followed. Therefore in practice such circumstances as vary natural effects, should with care be guarded against, and much greater regard paid to positive than to negative facts, since unknown and accidental influence often produces the latter.

§§ Facts frequently are of such importance, that it is necessary to be acquainted with their causes; and this chiefly as there is occasion to avoid or renew their effects. The knowledge or ignorance of their causes may be a great advantage or misfortune. If a farmer reaps an excellent crop, he surely will enquire into the cause, and endeavour by the same means to produce a similar one; and when he reaps a very indifferent crop, he will be as inquisitive to know the reason, in order to prevent the misfortune for the future.

The application of causes in such a manner as to insure their effects, is of equal importance; nor is this an abstruse subject: for natural causes and their operations are of the most simple nature, although they require the most exact performance of those circumstances which are essentially necessary to produce their effects.

The preference, which the fact has before every other consideration, requires that it should not be neglected, merely with the view of attending to its cause. Some people are perpetually seeking after causes, and slight their effects; and when those are not apparent,
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which frequently happens, they even invent or take up with some one or other supposed cause in a very fallacious manner. But is it not better to remain in ignorance than commit error? Is not the knowledge of facts a sufficient attainment, although their causes are unknown?

The explanation of the mode, in which causes produce their effects, or what commonly is called the proximate cause, often is in a similar way misapplied. It frequently is out of our power to investigate this; and the knowledge of it is far less useful than of the remote causes. The industrious farmer often is too busy in his explanations of the manner in which effects are produced. I have heard even sensible farmers, speaking of facts, alledge, they knew them; but what they said was still greater, they could also explain how they were so.

§§ Man in all his actions should have rules to regulate his conduct. A due consideration of the grounds on which we act, is of great importance: if these are sufficient, our labours are laudable; if they are not supported by reason, we may perhaps succeed; but the
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chance is great that we fail, when in affairs of consequence heavy misfortunes will ensue. It is therefore a good maxim for the farmer, never to depart from his usual practice without the sufficient warranty of fact: but last summer I saw a worthy man lose a valuable crop upon a field of excellent soil, merely from the want of this precaution.

§§ The use and tendency of facts frequently are not evident but obscure; and ability and readiness in perceiving them are very useful. A very valuable grass is now common in Jamaica, which was introduced from skill of this nature; but by many people the advantages which it has yielded would never have been attended to. A sack brought from Africa into the island was, when almost empty, shaken out by a gentleman near his own house: in the place a grass arose of very excellent quality, which flourished remarkably well during a sultry hot season in that country, when all other grasses were burnt up. He therefore made trial of it, and found that cattle liked it; and saving the seed, has propagated it through the whole island with very beneficial consequences.

§§ All the exertions in the power both of the common and philosophic farmer are necessary, and must be employed, in order to know agriculture

culture in its present state, and to advance it with new important facts and improvements; also they are equally wanted to carry such knowledge into effectual practice. Of the different forms of assiduity, patience and spirited labour, are here more especially required.

The patriotic design of perfecting the cultivation of any kingdom, is not to be reprefed in the least, because it cannot be accomplished without such efforts of industry. For rural pursuits, however laborious, are delightful! Beauty and utility go hand in hand together thro' the tasks of husbandry; and thought and imagination mix with the actual labours of the farmer, and alleviate his toils!

2. As to observation;—

It is well known as a means of gaining knowledge; in which the mind only pays attention to objects, which, of their own accord, present themselves to its notice, and voluntarily exhibit their tendencies and uses. In this way nature has liberally provided a number of objects or the perusal of observation, and opened to the view of man a fund of science. From his

own works there also grow out objects different from the primary ones, which were proposed, and which furnish much useful matter for observation. Shall we slight knowledge, which in such an easy and gracious manner is revealed to us? There hardly is a source from which more abundant information can be drawn, nor can the walks of science be laid out in a more agreeable situation.

The farmer is in a peculiar manner favoured with opportunities of making observations, being daily conversant with the principal source which affords them; for he is the servant of Nature, under whose auspices all his operations are conducted.

There are assistances, which render the advantages drawn from making observations more easily, and in greater extent attainable. Man can scarce pretend to make them in regard to subjects, with which he is entirely unacquainted: at least, if he does, they will be of much less service to him: he will know very little of their application, and overlook many, which may be very useful. If we undertake to know a science, in which we are wholly ignorant, by means of our own observation without other assistance, the
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work will be too laborious and difficult, but by acquiring previously a general knowledge of the subject, it will be greatly expedited : we are by this means enabled, as we go along, to distinguish the nature and quality of the objects which offer themselves, whether they be old or new, trifling, or of importance ; and a delightful task only remains, for to behold the display and advancement of his knowledge in the works of nature, gratifies in a high degree, the heart of man.

The just interpretation of objects of observation, accordingly as they are presented, is essentially requisite to secure the advantages which may be drawn from them. A conception of them conformable to their true state, and to the wonted simplicity of nature, enables us to place our observations on a steady basis, and to exhibit their natural appearances in any account we may give of them ; and at the same time prevents them from being erroneously understood, and falsely represented.

3. As to experiments ;—

Man is too inquisitive to content himself with his acquaintance of objects and their qualities, as they display themselves voluntari-

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ly to his senses, and too wise to be satisfied, because they can be further investigated by his reasoning faculty; he therefore proceeds to institute experiments, as one means among others of attaining further knowledge, and when properly conducted, they yield him valuable acquisitions. The farmer has found no less benefit from them, than the promoters of other sciences. To philosophic farmers, they afford great pleasure and amusement; nor can men, who have estates, and many leisure hours, be more happily employed than in making them; but in the light of profit, no less than as objects of pleasure they deserve attention and respect. Then why are they neglected? Some experiments are difficult, and not made without great expence: but surely the abilities, both in respect of mind and fortune, which many persons in this kingdom enjoy, soon overcome such an objection. Are not Noblemen highly respected on account of knowledge, which their experiments on agriculture have forwarded and brought to light? But many experiments are wanted in agriculture, which are easily executed, and at little or no expence. Thus I have known two country gentlemen engaged in very warm controversy, whether, *cœteris paribus*, horses preferred green or brown hay, when, with much less trouble,

trouble, they might have determined it experimentally. By offering both sorts of hay to their horses, the truth would immediately have been determined by the uncorrupted sentence of these animals.

For enabling experiments to discover with greater advantage new facts and valuable knowledge, there are precautions and assistances, which, if we had a more favourable opportunity, should not be slightly passed over.

A man, ignorant in the instruments or means, which he uses, is not qualified for an experimenter; he should be versed in the particular subject to which his experiments refer, and he will receive much advantage from a habit of making them.

Reasoning may, on some occasions, afford the experimental inquirer no assistance, or he may withdraw his confidence from it, until its validity is actually experienced; its services, however, on many occasions, are important in regard to experiments: it is assistant in those conclusions, which experiment cannot reach, and often suggests the first hint of a fact, and the means of ascertaining its truth. Competency of judgment is as necessary as reasoning,

in the experimental pursuit of knowledge. No inconsiderable exertions of the human mind may be necessary in the detection of knowledge by experiment, and ingenuity find sufficient room to act. Many experiments may be wanted for the ascertainment of a fact, and much labour, and great abilities, necessarily displayed in the construction of a single one.

Fallacy is not unfrequent in experiments; and as it mars the good expected from them, they should be carefully guarded against it. No man, whose disposition is partially inclined and swayed by prejudices, or who is unacquainted with the nature of facts, and the regulations to be observed in regard to these, is qualified for conducting them. Facts, in agriculture, acquired by their means, are in some respects peculiarly liable to error: the confined space, for instance, in which they are made, may cause too favourable or a contrary result from them; it offers the subject in too limited a view, and more industry, and greater advantages, are bestowed on a little experiment, than can be afforded a large field: hence the fact in working at large may be very different from its assay, though the operations in both should be similar.

Experiments

Experiments may be tried on a large or on a small scale. They may be made in as great extent, as when they are followed at large; but this is almost always too hazardous, and in a high degree imprudent.

A portion of ground may be set apart for experiments, or they may be instituted along with common agriculture by variations, in the way of experiment, from the usual practice. The first is more suitable to the man of fortune, and the philosophic farmer; and even three or four acres of land assigned for this use, and changed occasionally, would supply them with a valuable source of entertainment and knowledge. The other is readily in the power of the common farmer, and therefore is more adapted to his use; though the man of fortune may also employ it with great advantage. When the expence is inconsiderable, or in the end will be repaid; or when experiments can be made, which not unfrequently happens, without expence, farmers of liberal minds should practise this means of improving husbandry, and acquiring knowledge.

4. As to experience :

It is a word, if not a term, much in use, and has, though I pretend not to say with what propriety, a definite and extensive signification in common husbandry, and may be considered here in two lights ; as it confirms knowledge by submitting it to practice, sufficient for determining its utility, and as it is the custom of a country or many individuals. In both these ways the truth of any subject of husbandry may be known and established on a firm footing. The high praises bestowed upon it are justly deserved, but as in other favourites, so there are here deficiencies and faults, which should carefully be noted. Thus experience in agriculture may often conceal errors under the cloak of custom, or be set up as a plea for them ; sometimes it is no better than a habit of bad husbandry, and not rarely hinders the introduction of new and valuable knowledge into practice.

5. As to information :

The knowledge of agriculture is of such extent, that the life of one or many men is not sufficient for attaining it ; hence information

greatly assists the farmer in knowing his business. It is to be drawn from books or men now living; therefore travelling, extensive acquaintance, and libraries, are very favourable to improvements of agriculture and sciences in general.

Husbandry lies very open to fallacy from information, falsehoods being frequently communicated instead of truth; even books of agriculture must be read with caution, and the mind is to vary in trusting them. Our informers, though men of great sagacity, may be erroneous in the opinions and facts which they relate. Interest induces some men to deceive, and caprice others.

6. As to the method of propagating the knowledge of judicious husbandry thro' the kingdom:

The execution of it, if possible, would be attended with great advantages: the desideratum to its performance is, that the farmer be well acquainted with a system of husbandry, containing a very complete knowledge of his business, and suited to his capacity and purchase.

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To enter further on this subject, it being a very copious one, would carry me too far; but it is necessary to observe, that as the farmer learns, or ought, in his Bible to learn, the duty which he owes his God, so he should have the opportunity of knowing his business in a system of agriculture, as capable of yielding him this advantage as that holy book, if he will read and attend to it, can perfect his spiritual concerns, and teach him what he is to do.



To instruct the farmer that he may be able, according to the most approved methods, to conduct his undertakings, and carry his knowledge into practice, may be considered as the third means of perfecting the husbandry of this kingdom.

The most spirited exertions, employed to the greatest advantage, and grounded on a sure basis, and their proper application to particular cases in practice, are of such importance, and so essentially necessary to the common farmer, and to the compleat cultivation of Great-Britain, that this head deserves very
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full confideration, if the time allowed for the present difcourfe would admit the difcuffion of it.

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There are very extenfive tracts of land in this kingdom, which either are of little or no ufe, or are capable of great improvements, and may be called wafte. The cultivation of them may be confidered as the fourth means of perfecting the husbandry of Great Britain. The importance of this will readily appear on enumerating the heads of the different wafte of this kingdom,

1. Heath land, confifting of three kinds: heaths with good foil; with black moory foil; and with fandy foil,

2. Lands, which I beg leave to ftile perverfely wafte, confifting of four kinds: common grafs wafte; wafte growing bent, fo called; town fields; and gaited pastures, if I may be allowed to ufe the term.

3. Land wafte with water, confifting of four kinds: land overflowed by the fea; land overflowed by rivers; fens; and bodies

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of

of water, as lakes, which may be either rendered dry or converted into profit, by stocking them with fish, and by other means.

4. Unprofitable woods.

To speak further on a subject which is merely practical, would be inconsistent with this occasion, although we were able to offer observations of consequence concerning it.

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Your assistance, Gentlemen, is wanting, as the fifth, and the last means, which I shall mention to perfect the husbandry of Great-Britain.

The diseases of quadrupeds and vegetables are numerous, and of important consequence to the public; medicine is applicable to them, and many remedies by the faculty may be pointed out for their cure. That you should attend to their maladies, and establish the treatment of them on a just foundation, I shall not attempt to prove: Nature herself addresses you on this occasion, and as I translate her language, she thus speaks: "You, my sons, who so often use my name, who rely so much upon your parent, when fatal
 3 " dangers

“ dangers are impending over mankind, hear
 “ me. I approve, I bless your generous la-
 “ bours, exerted for the welfare of man, but
 “ life and the charms of health and beauty are
 “ not terminated with him my favourite ;
 “ their interests are mine, and in every part of
 “ creation I sympathise with them and their dis-
 “ tresses. To restore to health my animals and
 “ my diseased plants, lend me then the skill I
 “ have put into your hands ; the minerals my
 “ bowels have yielded, and the vegetable jui-
 “ ces, which I have medicated from my blood.
 “ In serving them are you not useful to your-
 “ selves and to your race ? For your know-
 “ ledge will furnish my neglected animals and
 “ vegetables with health and increase, with
 “ fatness and fertility, only for your own
 “ use.”

Permit me to conclude with nature ; and
 may benevolence to your fellow creatures,
 may gratitude to her, interest you and this
 society in the diseases of animals and quadru-
 peds, which are important to the farmer, in
 order to promote husbandry, without which
 man is but a savage.

T H E E N D.



